



FY 1999 Technology Deployment in Environmental Management

Engineering Tomorrow's Solutions Today

**Site Technology Coordination Group / Technology Deployment Center
U.S. Department of Energy, Idaho Operations Office**



RH TRU Waste Surrogates

Problem: Surrogates were required for proof-of-principle testing of an INEEL non-destructive assay (NDA) system used for characterization of remote-handled transuranic (RH-TRU) wastes scheduled for disposition at the WIPP.

Baseline Technology: Intrusive sampling and destructive analysis of actual RH-TRU wastes to confirm INEEL RH-TRU NDA system performance.

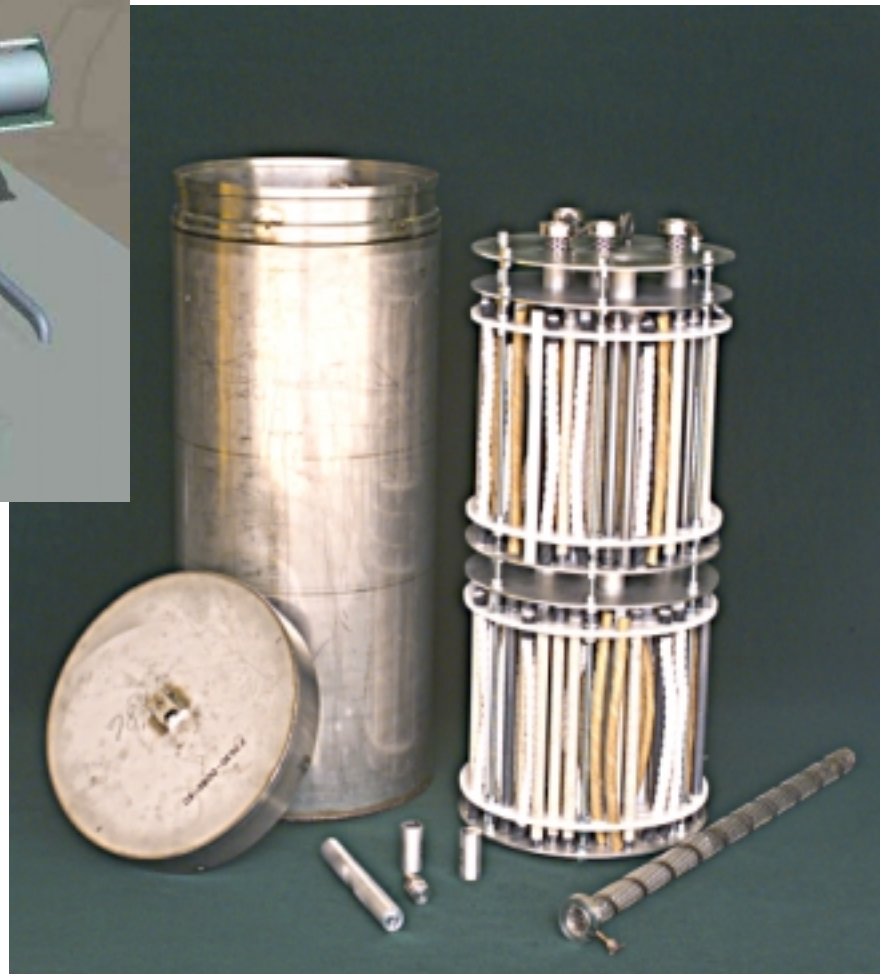
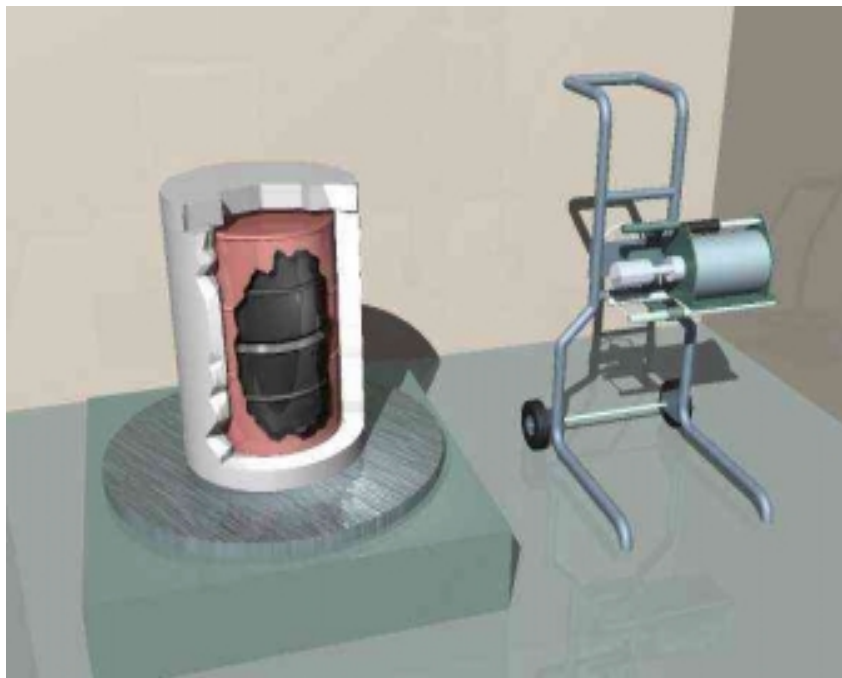
Innovative Technology: Fabrication of waste matrix surrogate drums and sealed reference source materials characteristic of 90% of INEEL's RH-TRU inventory, and use for assessment of INEEL RH-TRU NDA system performance.

Comparison: Use of RH-TRU waste surrogates for proof-of-principle testing allows determination of the uncertainty of the INEEL RH-TRU NDA system, as required by the WIPP Quality Assurance Program Plan, without intrusive sampling or destructive analysis of actual RH-TRU waste.

Benefits: Incorporation of RH-TRU waste surrogates as calibration standards for INEEL RH-TRU NDA operations is expected to reduce the need for intrusive examination of RH-TRU waste drums, with associated reductions in labor costs, worker exposure, and generation of secondary wastes.

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Idaho National Engineering and Environmental Laboratory